LMM31™

Dimmer Micromodule, 1 load

USER MANUAL

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SAFETY WARNINGS

- The wiring of your electrical installation is live (230 V) and extremely dangerous. Never connect the module when plugged into the mains. Always turn off the main switch before starting the installation.
- This product is for professional use and should be installed by a certified installer."
- To prevent short circuits, this product should only be used inside and only in dry spaces. Do not expose the components to rain or moisture. Do not use the product close to a bath, swimming pool etc.
- Do not expose the components of your systems to extremely high temperatures or bright light sources.
- In case of improper usage or if you have altered and repaired the product yourself, all guarantees expire. Haibrain does not accept responsibility in the case of improper usage of the product or when the product is used for purposes other than specified. Haibrain does not accept responsibility for additional damage other than covered by the legal product responsibility.

- This product is not a toy. Keep out of reach of children.
- Do not open the product: the device may contain live parts. The product should only be repaired or serviced by a qualified expert.
- Automatic switching devices provide comfort, but can also be dangerous. They can surprise people or can ignite clothing hanging over an electric heat source. Please be careful and take appropriate measures to avoid accidents.

HOW DOES HAIBRAIN X-10 WORK?

Haibrain X-10 components use the existing mains wiring to communicate (using Haibrain X-10 signals). You can build a complete system using the three different kind of components of the Haibrain X-10 System:
1. Modules: These components will receive Haibrain X-10 signals and will switch or dim the attached lamp or appliance. Examples of these modules are lamp modules and appliance modules. These are available as build-in, micro, DIN rail and plug-in modules.
2. Controllers: These components will transmit Haibrain X-10 signals and thus will control the Modules.
3. Transmitters:Wireless components like remotes. The signals of these components will be received by a controller with transceiver functionality (IRRF 7243, TM13, CM15Pro…..). The Transceiver will translate the signals into Haibrain X-10 signals on the power line.

ADRESSES

Up to a maximum of 256 different addresses can be preset. These are subdivided into a so-called HouseCode (A to P incl.) and a UnitCode (1 to 16 incl.). The HouseCode can also be set on the controllers, so that the controllers and modules become part of the same system. The address can be set either using code dials or by pressing buttons, depending on the type of module.
The Haibrain X-10 System uses standard commands, which control all units with the same HouseCode at the same time (e.g. all lights on, all units off, etc.).

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Range of Haibrain X-10 signals over the Power Line and how to increase the range.

The Haibrain X-10 System is based on power line communication. The range of the Haibrain X-10 signals very much depends on the local circumstances. On average the range is a cable length of 80 meters.

If you have difficulties with the range of your Haibrain X-10 signals, please pay attention to the following facts:

1. When more than one phase is used for your electrical system, it is necessary to couple these phases for the Haibrain X-10 signals. For coupling you can use FD10 Phase Couplers/Filters. You only need to install a Phase Coupler/Filter when your wall outlets and light switches are divided over more than one phase (more than one group is no problem). For bigger buildings or longer distances we advice you to use an active repeater instead of passive FD10's.
2. It is possible that Haibrain X-10 signals are attenuated by devices and lights which are connected to the power line. In a normal home situation this effect is negligible (the Haibrain X-10 system is using active gain control to eliminate the effects). However, it is possible that a particular device in your house is attenuating the signals so much that the range of Haibrain X-10 signals is decreased significantly. When you have range problems, it is wise to try to locate the device which is attenuating the signals simply by unplugging devices from the power line, and testing the differences in range for your Haibrain system. When e.g. your conclusion is that e.g. your computer monitor is attenuating the signal, you can use a FM10

Plug-in Filter between the power line and the monitor to eliminate the effects.

Known devices which can cause attenuation are:

PC Monitors
PCs with heavy internal power supplies
Old Televisions
Copiers
Fluorescent Lights
Gas Discharge Lamps (Energy Saving Lamps)

3. Some (old) devices are able to disturb the signal by transmitting noise on the power line. Because the Haibrain X-10 signals are transmitted on 120 kHz, only noise on or near this frequency will have influence on the range. When you use a FM10 Filter to connect this device to the power line, the noise will be filtered.
4. The Haibrain X-10 protocol has several mechanism to avoid modules to be switched on or off by other sources than your Haibrain X-10 Controllers. However, it is possible that the Haibrain X-10 signals are disturbed by e.g. baby phones which are in TALK mode (continuous transmission). When these kind of signals are present on the power line it is possible that the Haibrain X-10 signals will not come through.
5. The mains do not stop at the front door of your home. Everything that is attached to mains nearby your home can have influence on Haibrain X-10 signals (e.g. heavy machinery). If you think that your system is influenced by devices out of your house, it is advisable to install FD10 Phase Coupler/Filter on each phase entering the house. These filters will block signals coming into or going out of your house, but will also match the impedance for the mains. Hereby make your house Haibrain X-10 compatible for these units. The FD10's will not only filter but will also couple the phases (please see 1).

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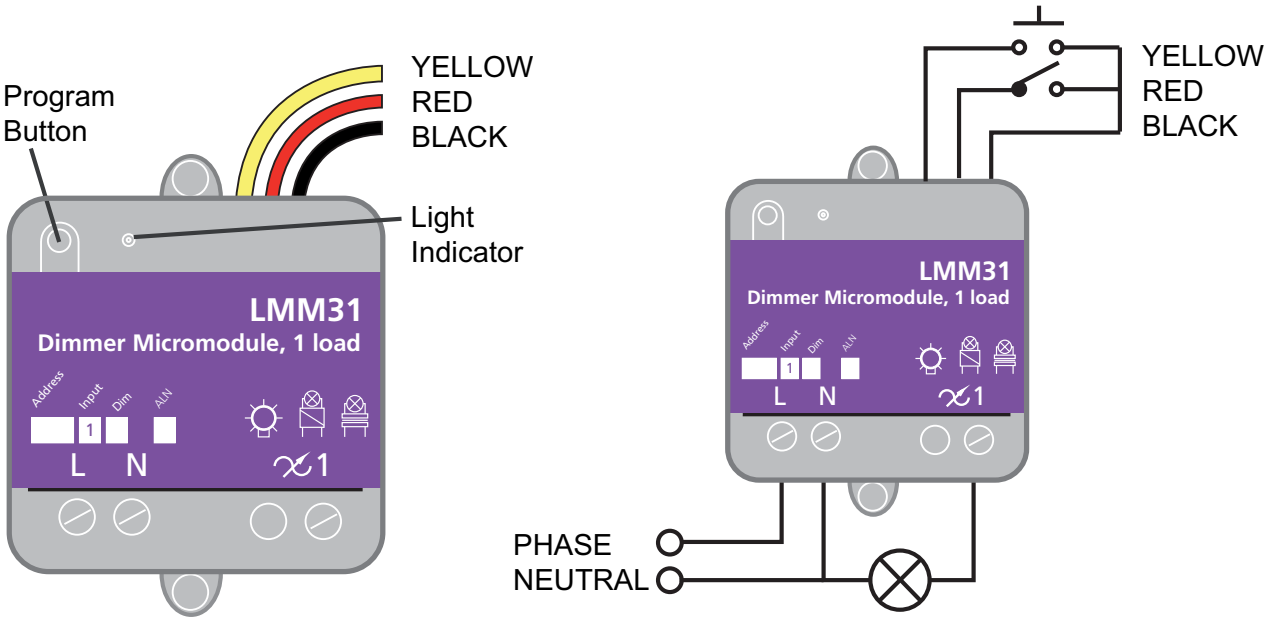
ONE-LOAD DIMMER MICRO MODULE



FUNCTIONS

- Remote control On, Off and Dim
- Suitable for 230V and low-voltage lighting with a transformer, including halogen lighting.
- Remote control via the mains using Haibrain X-10 Commands and with one or more momentary switches.
- Switches and dims lighting circuits up to 300W.
- Can be used in combination with ‘designer’ switching material.
- Soft start and smooth dimming features, remembers the last dim setting.
- Makes your X-10 system invisible.
- Can be regulated from 0% lighting to the desired dim setting.
- The module is not suitable for dimming and controlling low-energy light bulbs and tube lighting.

An Appliance module should be used for these devices.

- Phase and Neutral have to be available before the module can be installed.
- Small enough (43.25*47*18.9mm) to fit into a wall box behind a standard wall switch.

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INSTALLATION

- Switch off appropriate mains fuse and master switch!
- Take the wall switch out of the wall box.
- Disconnect all wires from the switch.
- Pull an additional Neutral wire if it is missing.
- Connect the phase, neutral and load wire to the “L”, “N” and “1” terminals of the micromodule
- Connect the thin Black and Red wires of the built-in module to the wall switch.
- Connect the thin Black and Yellow wires of the built-in module to the 1-way momentary switch (normally open contact).
- Position the MicroModule against the back wall of the wall outlet behind all the wires.
- You are now able to program the MicroModule.
- For more information see chapter “Programming”.
- Install the wall switch at its original place after the MicroModule is programmed.
- **Please note:** due to heat generation, apply no more than one module per flush socket / central socket!

PROGRAMMING.

WARNING: DO NOT FORGET TO TURN ON THE MAIN MASTER
SWITCH PRIOR TO PROGRAMMING.

Programming the address: The factory setting for the LMM31 is to address A1.
Unlike most Haibrain X-10 Modules the LMM31 does not have code wheels.
To change the address, the module needs to be set to the program mode.
Press and hold the “Program” button for 5 seconds, indicator light flickers once, the controlled light Turns ON, means entering “Program mode”. Then you transmit the address command, at this time the indicator light goes OFF, and controlled load goes OFF.
Warning! The MicroModule will leave the setup mode if it doesn’t receive any commands within 30 seconds.

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FREQENTLY ASKED QUESTIONS

What is the reason for modules to switch on/off spontaneously?

It is possible that a Haibrain X-10 System is installed at one of your neighbours using the same House Code. To solve this problem try to change the House Code of your system, or have FD10 Phase Coupler/Filter installed at your incoming mains.

My modules will not respond to my controller.

Make sure that the House Code on all Modules and Controllers are set to the same House Code (A .. P).

My modules will not react to my remote / sensor.

When you use a remote or sensor, you should have at least one Transceiver, CM15Pro or Haibrain X-10 Security Console installed in your house. These components will translate the radio signals to the Haibrain X-10 signal on the power line. Using several remotes and sensors, you only need one central transceiver.

Am I able to increase the range of my remotes by using more Transceivers?

Yes, you can use more than one Transceiver in your home when the range of your remotes is not sufficient. The transceiver is using
so called collision detection to prevent signals to be disturbed when more than one transceiver is transmitting. The Transceivers will wait for a quite power line before transmitting their data. To prevent your Haibrain X-10 System to become slow or to prevent dimming from becoming less smooth, make sure that the transceiver units are placed as far away from each other as possible.

Do you have other questions that have not been resolved by the above information? Please go to http://www.haibrain.com.

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TECHNICAL DATA

Supply voltage:	230VAC +10% -10% 50 Hz
Power Consumption	< 1W
Making capacity:	300W for inductive/capacitive load
Control Load QTY:	One
Dimmable:	Yes
Signal sensitivity:	better than 25 mVpp at 120 kHz
X-10 Key codes to respond to:	All units Off, All Lights On, On, Off, DIM, BRIGHT, Extended Dim
Input switch:	1- way standard rocker switch (ON/OFF), 1-way momentary switch (normally open contact) (ON/OFF/DIM)
Use in 3 phase installation:	FD10 (3x) or FKX40 necessary
Connections:	Wire for a standard rocker switch or momentary switch and connecting clamps for phase, neutral and switched phase.
Connection range:	Up to 2,5 mm2
control lines	not more than 1 meter between the micro module and the switch
Ambient temperature:	-10°C tot +50°C (Operation)
Weight:	45 gram
Dimensions:	43.25mm x 47mm x 21mm

Specifications may be modified without prior notice.

Environmental Information for Customers in the European Union

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

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DECLARATION OF CONFORMITY

Hereby, Haibrain BV, declares that this LMM31 is in compliance with the essential requirements and other relevant provisions of the following Directives:

Directive 2004/108/ec of the european parliament and of the council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

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